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EXAMINER
ZHEN, LI B

ART UNIT	PAPER NUMBER
2194	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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	Application No.	Applicant(s)
Office Action Summary	10/808,223	KRISHNASWAMY ET AL.
	Examiner	Art Unit
	LI B. ZHEN	2194

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>12 January 2009</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-6,11-13 and 15-26</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-6,11-13 and 15-26</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 1 – 6, 11 – 13 and 15 – 26 are pending in the application.

Response to Arguments

2.   Applicant's arguments filed 1/12/2009 have been fully considered but they are

not persuasive. In response to the Non-Final office action mailed 10/16/2008, applicant

argues:

> (1) In response to the 35 USC §112, first paragraph rejection, applicant refers to p.
>
> 13, line 10 – p. 14, line 21 and p. 8, lines 35 – 37 to provide written description
>
> support for the limitation "converting by the data transformation adapter the one
>
> or more data objects in XML to a non-eXtensible Markup Language (non-XML)".
>
> Applicant argues that the non-limiting exemplary code noted above discloses a
>
> specification of a process to transform a source object that can be represented
>
> by XML data to a target object that can be represented by non-XML data, such
>
> as in a Java object, or an object represented by another programming language.
>
> (2) Rising discloses "publishing an XSLT document containing the transformation
>
> functions for mapping into the application specific markup language, and
>
> publishing the frequency tables for the ASDL namespace for access by the
>
> clients 102, 104 over a communications network 110." In contrast, claim 1
>
> discloses employing mapping rules including XML based syntax that uses rule
>
> specification guide to facilitate transforming the one or more data objects in XML
>
> to non-XML. In other words, the mapping rules facilitate transformation of the

data objects to non-XML data without resorting to XSLT transformation and its

attendant inefficiencies (e.g. due to xpath queries). [pp. 11 – 12];

(3) The claimed invention increases performance by transforming object data in XML

to non-XML rather than to an XML format as a result of an XSLT transformation.

The object data in non-XML can be used in an application programming interface

and does not involve run-time interpretation of transformation specification as in

XSLT transformation. [p. 12]; and

(4) The XSLT transformation transforms a first XML document type into a second

XML document type. Lavin fails to remedy these deficiencies. Therefore,

Applicants respectfully submit that Rising in view of Lavin fail to teach, disclose,

or suggest transforming the data objects in XML to non-XML, as recited in claim

1 [p. 12].

In response to argument (1), examiner respectfully disagrees and notes that the

specification does not disclose "converting by the data transformation adapter the one

or more data objects in XML to a non-eXtensible Markup Language (non-XML)". The

specification discloses an adapter that performs transformation between a domain

object model format (DOM) and an application specific object model format (ASOM) [p.

4, lines 18 – 20; p. 5, lines 1 – 18; p. 5, lines 19 – 30; p. 17, lines 1 – 16; "At step 82, the

transformation system converts the DOM objects to ASOM objects," p. 18, lines 7 – 9;

p. 19, lines 13 – 19] and in one embodiment, both the domain objects and application

objects are Java objects [p. 4, lines 19 – 20; p. 5, lines 22 – 30]. In addition, the

specification discloses: "objects in the input parameter list are of the types defined in the

DOM and they are converted to the ASOM types" [p. 5, lines 13 – 15], "transformation

layer 24 transforms data from the DOM format to the ASOM format, and/or from the

ASOM format to the DOM format" [p. 7, lines 10 – 12], and "a group or set of

transformation classes may be used to transform objects from the DOM to the ASOM,

and a different group or set of transformation classes may be used to transform objects

from the ASOM to the DOM" [p. 16, lines 5 – 15]. It is noted that the specification

discloses using XML mapping rules to transform objects from the DOM format to ASOM

format [p. 17, lines 10 – 16]. The mapping rules are in the XML format; however, the

objects are in the DOM and ASOM format. Therefore, it is submitted that the

specification only discloses converting between DOM object types and ASOM object

types and does not disclose "converting by the data transformation adapter the one or

more data objects in XML to a non-eXtensible Markup Language (non-XML)".

As to argument (2), examiner notes that the claimed mapping rules to

transforming the data objects do not preclude the use of XSLT transformation. Rising

teaches converting by the data transformation adapter [translators 113, 119 use

transform functions defined in an XSLT (XML stylesheet translation) document that

maps between DDL and ASDL namespaces; paragraph 0023] the one or more data

objects in XML to a non-extensible Markup Language (non-XML) [ASDL may written in

a language other than XML; paragraph 0024]. The translators in Rising uses the XSLT

transform functions to convert data objects in XML to non-XML format [from DDL to

ASDL, where ASDL may be written in a language other than XML; paragraph 0024].

Therefore, Rising and Lavin teaches applicant's invention as claimed.

As to arguments (3) and (4), Rising teaches converting by the data

transformation adapter [translators 113, 119 use transform functions defined in an XSLT

(XML stylesheet translation) document that maps between DDL and ASDL

namespaces; paragraph 0023] the one or more data objects in XML [DDL is based on

the XML standard; paragraph 0008] to a non-extensible Markup Language (non-XML)

[ASDL may written in a language other than XML; paragraph 0024]. The ASDL in

Rising can be a language other than XML; thus, the translators in Rising uses the XSLT

transform functions to convert data objects in XML [DDL] to non-XML format [from DDL

to ASDL, where ASDL may be written in a language other than XML; paragraph 0024].

Response to Amendment

3.   Applicant's amendment to claim 22 fails to overcome the outstanding 35 U.S.C. §

101 rejection (see the updated rejection below).

Claim Rejections - 35 USC § 112

4.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5.   Claims 1 – 6, 11 – 13 and 15 – 26 are rejected under 35 U.S.C. 112, first

paragraph, as failing to comply with the written description requirement. The claim(s)

contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Currently amended claims 1, 11, 17, 22 and 26 recite the new limitation "converting by the data transformation adapter the one or more data objects in XML to a non-eXtensible Markup Language (non-XML)". There does not appear to be a written description of the claimed limitation in the application as filed. Examiner was unable to find specific disclosure of converting data in XML to non-XML. In addition, dependent claims 4, 13, 20, and 25 identify the non-XML as including an application-specific object model type. However, application's specification discloses that application-specific object model object types are represented in XML schema [p. 8, lines 8 – 9 and line 27]. Therefore, it is unclear as to how non-XML data objects can include application-specific object model types that are represented in XML schema. Applicant's specification does not disclose or suggest converting data in XML to non-XML format.

The specification discloses an adapter that performs transformation between a domain object model format (DOM) and an application specific object model format (ASOM) [p. 4, lines 18 – 20; p. 5, lines 1 – 18; p. 5, lines 19 – 30; p. 17, lines 1 – 16; "At step 82, the transformation system converts the DOM objects to ASOM objects," p. 18, lines 7 – 9; p. 19, lines 13 – 19] and in one embodiment, both the domain objects and application objects are Java objects [p. 4, lines 19 – 20; p. 5, lines 22 – 30]. In addition, the specification discloses: "objects in the input parameter list are of the types defined in the DOM and they are converted to the ASOM types" [p. 5, lines 13 – 15],

"transformation layer 24 transforms data from the DOM format to the ASOM format,

and/or from the ASOM format to the DOM format" [p. 7, lines 10 – 12], and "a group or

set of transformation classes may be used to transform objects from the DOM to the

ASOM, and a different group or set of transformation classes may be used to transform

objects from the ASOM to the DOM" [p. 16, lines 5 – 15]. It is noted that the

specification discloses using XML mapping rules to transform objects from the DOM

format to ASOM format [p. 17, lines 10 – 16]. The mapping rules are in the XML format;

however, the objects are in the DOM and ASOM format. Therefore, it is submitted that

the specification only discloses converting between DOM object types and ASOM object

types and does not disclose "converting by the data transformation adapter the one or

more data objects in XML to a non-eXtensible Markup Language (non-XML)".

Claim Rejections - 35 USC § 101

6.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

7.   Claims 22 – 25 are rejected under 35 U.S.C. 101 because the claimed invention

is directed to non-statutory subject matter.

Claim 22 recites a system comprising: a communication line, a computer

readable medium having a transformation adapter, transformation class generator, and

an application. The transformation adapter, transformation class generator, and an

application are interpreted as software only. The communication line as disclosed in the

specification (p. 21, lines 1 – 5) includes wireless or infrared signals. The amendment

to claim 22 adds "a computer readable medium" to the system of claim 22. However,

specification does not provide antecedent basis for the term "computer readable

medium". The specification provides support for communication media that includes

wireless signals [p. 21, lines 1 – 14] and disk storage [p. 20, lines 18 – 25]. Without

antecedent basis for the term "computer readable medium", it is submitted that the term

computer readable medium is sufficiently broad to include wireless signals, which are

non-statutory subject matter.

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

9.   This application currently names joint inventors. In considering patentability of

the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

10.   **Claims 1 – 6, 11 – 13 and 15 – 26 are rejected under 35 U.S.C. 103(a) as**

being unpatentable over U.S. Patent Application Publication No. 2002/0120652 to

Rising et al. [hereinafter Rising] in view of U.S. Patent Application Publication No.

2003/0037174 to Lavin et al. [hereinafter Lavin].

11.   As to claim 1, Rising teaches a method of data object transformation between a

middleware and a application [paragraph 0023], the method comprising:

receiving a message by a data transformation adapter [DDL to ASDL translators

113, 119; paragraph 0023], the message including one or more data objects in an

extensible Markup Language (XML) [DDL for MPEG-7 multimedia content is based on

the XML; paragraph 0008],

converting by the data transformation adapter [translators 113, 119 use transform

functions defined in an XSLT (XML stylesheet translation) document that maps between

DDL and ASDL namespaces; paragraph 0023] the one or more data objects in XML to

a non-extensible Markup Language (non-XML) [ASDL may written in a language other

than XML; paragraph 0024], wherein the one or more data objects are converted using

a first set of one or more transformation classes [paragraph 0028], the one or more

transformation classes being configured to transform the one or more data objects in

XML to non-XML [paragraph 0023 and 0024], each of the one or more transformation

classes generated using mapping rules [transformation functions for mapping into the

application specific markup language; paragraph 0031], the mapping rules including

XML based syntax that uses rule specification guide to facilitate transforming the one or more data objects in XML to non-XML [paragraph 0024]; and

transmitting by the data transformation adapter the one or more data objects in non-XML to an application [resulting binary ASDL instance document is published on the web site 108 for transmission to the clients 102, 104 upon request; paragraph 0032]. Rising does not teach a messaging middleware, a message in a first communications format, converting by the data transformation adapter the message from the first communications format to a second communications format.

However, Lavin teaches a messaging middleware [middleware software 116; paragraph 0066], a message in a first communications format [middleware format; paragraph 0084], converting by the data transformation adapter the message from the first communications format to a second communications format [translation 138 moves the data from the middleware format to a neutral format which is then converted to the application format by the plug 140; paragraph 0085].

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the invention of Rising to incorporate the features of Lavin. One of ordinary skill in the art would have been motivated to make the combination because this organizes an adapter/connector into a plug and socket and isolates application-specific software services and resources into the plug and middleware-specific software components into the socket [paragraph 0034 of Lavin].

12.   As to claim 11, Rising as modified teaches a data transformation adapter [DDL to

ASDL translators 113, 119; paragraph 0023 of Rising] having program instructions

stored in memory [paragraph 0033 of Rising], the program instructions comprising:

generating a first object model [DDL for MPEG-7 multimedia content is based on

the XML; paragraph 0008 of Rising] and a second object model [ASDL may written in a

language other than XML; paragraph 0024 of Rising], the first object model including a

plurality of data objects in an extensible Markup Language (XML) [paragraph 0008 of

Rising], and the second object model including a plurality of data objects in a non-

extensible Markup Language [paragraph 0024 of Rising] storing the first and second

object models in one or more memories [paragraph 0033 of Rising];

generating mapping rules [paragraph 0023 of Rising], the mapping rules

including XML based syntax that uses rule specification guide to facilitate transforming

the one or more data objects in XML to non-XML [paragraph 0023 and 0024 of Rising

and paragraph 0085 of Lavin];

generating a plurality of transformation classes using the first and second object

models and the transformation mapping rules [paragraph 0023 of Rising], the one or

more transformation classes being configured to transform the one or more data objects

in XML to non-XML receiving one or more data objects [paragraph 0023 and 0024 of

Rising and paragraph 0142 of Lavin];

converting the received one or more data objects, via the transformation classes,

(1) in XML to non-XML [paragraph 0024 of Rising]; or (2) in non-XML to XML; and

transmitting the converted one or more data objects [paragraph 0032 of Rising].

13.   As to claim 17, this is a system claim that corresponds to method claim 1;

therefore, it is rejected for the same reasons as claim 1 above.

14.   As to claim 22, Rising as modified teaches a system for data object

transformation [paragraph 0023 of Rising], the system comprising:

        a communications line [paragraph 0031 of Rising];

        a computer readable medium executable on a computer system the computing

system coupled to the communications line [paragraph 0033 of Rising and paragraph

0160 of Lavin], the computer readable medium having a transformation adapter

[paragraph 0023 of Rising] coupled to the communications line, the transformation

adapter including:

        an assembly/disassembly layer configured to convert messages from a first

communications format to a second communications format [paragraph 0085 of Lavin];

        a transformation layer configured to convert data objects in an extensible

Markup Language (XML) to a non-extensible Markup Language (non-XML) using one or

more transformation classes [paragraph 0023 of Rising], the one or more transformation

classes being configured to transform the one or more data objects in XML to non-XML

[paragraph 0024 of Rising]; and

        a method invocation layer [paragraph 0196 of Lavin];

        a transformation class generator coupled to the transformation adapter, the

transformation class generator configured to generate the one or more transformation

classes using transformation mapping rules [paragraph 0031 of Rising], the mapping

rules including XML based syntax that uses rule specification guide to facilitate

transforming the one or more data objects in XML to non-XML [paragraph 0024 of

Rising]; and

     an application coupled to the transformation adapter, wherein the application

transmits data to and receives data from the method invocation layer [paragraph 0032

of Rising].

15.   As to claim 26, this is an apparatus claim that corresponds to program product

claim 11; therefore, it is rejected for the same reasons as claim 11 above.

16.   As to claim 2, Rising as modified teaches the first communications format

includes a middleware-dependent format, and the second communications format

includes a middleware-independent format [translation 138 moves the data from the

middleware format to a neutral format which is then converted to the application format

by the plug 140; paragraph 0085 of Lavin].

17.   As to claim 3, Rising as modified teaches wherein each of the one or more data

objects includes a Java object [paragraph 0088 of Lavin].

18.   As to claim 4, Rising teaches wherein the XML includes a domain object model

type [DDL, general application domain; paragraph 0013] and the non-XML includes an

application-specific object model type [Application Specific Description Languages;

paragraph 0022].

19.   As to claim 5, Rising as modified teaches registering the application with the

messaging middleware [paragraph 0118 of Lavin]; and transmitting high-level function

calls to the application [paragraph 0031 of Lavin].

20.   As to claim 6, Rising as modified teaches receiving a second message from the

application, the second message including one or more data objects in non-XML

[translating back (via XSLT) to the full DDL, and through a second translation function;

paragraph 0037 of Rising]; converting the one or more data objects in non-XML to XML,

wherein the one or more data objects are converted using a second set of one or more

of the transformation classes [paragraph 0023 of Rising]; generating a communications

line dependent message, the communications line dependent message including the

one or more data objects in XML [paragraph 0085 of Lavin]; and transmitting the

communications line dependent message to the messaging middleware [paragraph

0032 of Rising].

21.   As to claims 12 and 13, these are rejected for the same reasons as claims 3 and

4, respectively.

22.   As to claim 15, Rising as modified teaches the one or more data objects are

received from a messaging middleware [paragraph 0066 of Lavin].

23.   As to claim 16, Rising as modified teaches the one or more data objects are

received from an application, the application being coupled to a messaging middleware

[paragraph 0066 of Lavin].

24.   As to claims 18 – 21, these are rejected for the same reasons as claims 1 – 4

and 6, respectively.

25.   As to claim 23, Rising as modified teaches wherein the communications line

includes messaging middleware [paragraph 0066 of Lavin].

26.   As to claims 24 and 25, these are rejected for the same reasons as claims 3 and

4, respectively.

Conclusion

27.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

        A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

CONTACT INFORMATION

28.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Li B. Zhen whose telephone number is (571) 272-3768.

The examiner can normally be reached on Mon - Fri, 8:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Meng-Ai An can be reached on (571)272-3756. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

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USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Li B. Zhen/
Primary Examiner, Art Unit 2194